



Missouri Department of Natural Resources Data Processing Policies and Procedures

Chapter 8 Data Processing

Digital Geospatial Metadata Component Content
Standard

Effective date

June 4, 2004

Revised

Number: 8.01-01

REFERENCES

This document supplements the department's *Content Standard for Digital Geospatial Metadata*, document number 8.01-00 in the DNR Administrative Policies and Procedures Manual. In an effort to help the department's geographic information systems (GIS) community understand these standards and how to implement them, [supplemental information](#) is available at the department's Intranet site.

GENERAL PROVISIONS

All geospatial data and metadata intended for distribution beyond those who create and maintain the data are to be reviewed by the department's GIS Coordinator for completeness and adherence to standards. Administrative Policies and Procedures Manual document number 8.01-00 provides direction on when metadata are to be included with a data set and the components that need to be included in the metadata. In contrast, this document is designed to ensure that the content in those metadata components is consistent with department publication guidelines and consistent with other metadata distributed by the department. Examples are shown in [blue text](#) throughout this document.

General

Metadata shall be checked for grammar and spelling and shall be accurate and informative.

Acronyms

Acronyms must be explained at the first use of the acronym.

[Missouri Department of Natural Resources \(MoDNR\)](#)

Department entities

References to organizational entities within the department shall be preceded with the name of the department and shall reflect the organizational structure of the department.

[Missouri Department of Natural Resources, Air and Land Protection Division, Solid Waste Management Program](#)

Dates

Dates appearing in metadata components shall be formatted as follows (YYYYMMDD):

[20030430](#)

When entering the information for the Time_Period_of_Content component in the Identification_Information section of the metadata, if the day is not known, then the format



Missouri Department of Natural Resources Data Processing Policies and Procedures

Chapter 8 Data Processing

Digital Geospatial Metadata Component Content Standard	Effective date	Revised
Number: 8.01-01	June 4, 2004	

YYYYMM is acceptable, and if the month is not known, then the format YYYY is acceptable for this component.

Hours of Service

Entries shall be formatted as follows. Note the differences in formats for time of day.

Monday through Friday 8:30 a.m. to 5:30 p.m. Central time

Monday through Friday 8 a.m. to 5 p.m. Central time

Disclaimers

The following disclaimer shall be included in every metadata file. The first sentence of the disclaimer shall be included in both of the sections listed below. The language in these disclaimers was approved by department legal staff and is not to be modified. Additional statements may be appended after the disclaimer in these sections of the metadata, but the disclaimer must appear first.

Under section 1.8, Use_Constraints, the following disclaimer must be included:

Although all data in this data set have been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the accuracy of the data and related materials.

Under section 6.3, Distribution_Liability, the following disclaimer must be included:

Although all data in this data set have been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the department in the use of these data or related materials.

Entity and Attribute Metadata

The department's policy regarding geospatial metadata stresses the importance of properly documenting entity and attribute domain values so that data consumers can understand the meanings of those values. The information provided in the following section is intended to ensure that we meet this objective without placing an unnecessary burden on data and metadata contributors. For the purpose of providing examples, the term "end user" will be defined as any potential user of a data set other than the data publisher. This includes staff in the same department entity, staff in other department entities, other agencies, and the general public.



Missouri Department of Natural Resources Data Processing Policies and Procedures

Chapter 8 Data Processing

Digital Geospatial Metadata Component Content
Standard

Effective date

June 4, 2004

Revised

Number: 8.01-01

All the data collected and maintained by the department serve some purpose or have some value. These data are of value to end users, but that value is often recognized only when the data or the reasons for collecting and maintaining that data can be understood. Although data publishers are encouraged to omit extraneous attributes from published data sets, there may be valid reasons for publishing attribute data that appear to be of limited utility. Some of these situations are described below and are accompanied by with examples of metadata descriptions.

In the example shown below, identification (ID) numbers used to uniquely identify features are not of particular value to end users unless they know that when they contact the data publisher, the ID numbers can expedite inquiries about a given feature.

Attribute:

Attribute_Label: UNIQUE_ID

Attribute_Definition: Unique identifier that is helpful to use when contacting the Missouri Department of Natural Resources for further information about a feature.

It may be desirable to include data in published data sets that are not of value to entities outside the department but are of value to department staff. Using a similar example with another unique identifier, the presence of the data can be explained in a metadata description.

Attribute:

Attribute_Label: FAC_NUM

Attribute_Definition: Numeric identifier intended for use by Missouri Department of Natural Resources (MoDNR) staff to reference facility information in other MoDNR systems.

It may also be desirable to include data in published data sets that are not of value to anyone but the department entity that collected and published the data.

Attribute:

Attribute_Label: OTHER_ID

Attribute_Definition: Identifier intended for use by Missouri Department of Natural Resources, Outreach and Assistance Center staff only.

In special cases when no other attribute data are present, an identifier may be included for the sole purpose of facilitating use by certain software packages including ArcView 3.x and ArcExplorer. If such an attribute is included, a metadata entry describing the attribute must also be included.

Attribute:

Attribute_Label: AUTO_NUM

Attribute_Definition: Unique record identification number provided for compatibility with certain software packages.



Missouri Department of Natural Resources Data Processing Policies and Procedures

Chapter 8 Data Processing

Digital Geospatial Metadata Component Content	Effective date	Revised
Standard	June 4, 2004	
Number: 8.01-01		

There may be cases where all values in an attribute are null but will change in the future.

Attribute:

Attribute_Label: FITS_ID

Attribute_Definition: Facility identification template for states (FITS) identification number used for environmental facility identification and data exchange, null if not assigned.

There may be cases where all values in an attribute are identical but will or may change in the future. In the example shown, all values would be identical if no sites were involved in remediation activities at the time the data were published.

Attribute:

Attribute_Label: REM_STATUS

Attribute_Definition: Indicator of remediation activity at site.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Yes, site is engaged in remediation activities.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: N

Enumerated_Domain_Value_Definition: No, site is not engaged in remediation activities.

There may be cases where all values in an attribute are identical and will always be identical. A data set with locations of air quality monitors is used for this example. The locations of air quality monitors depicted in this data set are distinguished from other types of environmental interests at the same location, but all values in the data set will be the same.

Attribute:

Attribute_Label: ENVIR_INT

Attribute_Definition: Three-letter code indicating type of environmental interest at location shown.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: AQM

Enumerated_Domain_Value_Definition: Air quality monitor.



Missouri Department of Natural Resources Data Processing Policies and Procedures

Chapter 8 Data Processing

Digital Geospatial Metadata Component Content
Standard

Effective date

June 4, 2004

Revised

Number: 8.01-01

A single method for representing unknown data must be selected for each attribute containing unknown values. Data publishers are encouraged to use consistent methods for representing unknown values throughout a data set, and for groups of related data sets for attributes that store the same data type.

For attributes containing text, the use of a word such as "unknown" or a single letter such as "u" is acceptable, although leaving the attribute values blank is preferable.

Attribute:

Attribute_Label: OWNER_NAME

Attribute_Definition: Name of owner of facility, blank if unknown.

For attributes containing numbers where zero can be a valid value, the use of -9999 or some variant of it (for example -99 or -9.999) is recommended. An example of this might be elevation above the land surface, where zero could indicate that a feature is at ground level. Since zero is a valid value for this numeric attribute and nulls would not be permitted, a number must be assigned to represent unknown values.

Attribute:

Attribute_Label: HEIGHT

Attribute_Definition: Estimated height above land surface in feet, -9999 if unknown.

For attributes containing numbers, the use of "0" is acceptable for representing unknown data provided that zero can not be considered a valid value for that attribute.

Attribute:

Attribute_Label: FIRE_DIST

Attribute_Definition: Distance to nearest fire hydrant, 0 if unknown.

Attribute definitions shall describe the values and clearly communicate their meaning.

Attribute:

Attribute_Label: FIPS

Attribute_Definition: Five digit Federal Information Processing Standards (FIPS) code for state and county in which feature is located.



Missouri Department of Natural Resources Data Processing Policies and Procedures

Chapter 8 Data Processing

Digital Geospatial Metadata Component Content Standard	Effective date	Revised
Number: 8.01-01	June 4, 2004	

Attribute definitions understandable to non-experts must be included for all attributes.

Attribute:

Attribute_Label: Structure

Attribute_Definition: Feature designation, blank if unknown.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: fault

Enumerated_Domain_Value_Definition: A planar or gently curved fracture in the Earth's crust across which there has been relative displacement.

Enumerated_Domain:

Enumerated_Domain_Value: anticline

Enumerated_Domain_Value_Definition: An arch of stratified rock in which the layers bend downward in opposite directions from the crest.

Attributes that use codes shall be documented to enumerate the meanings of those codes.

Attribute:

Attribute_Label: REC_TYPE

Attribute_Definition: Record type. Each entry refers to an individual water well, monitoring well, abandonment, reconstruction, heat pump, or pump work at a particular location, blank if unknown.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: A

Enumerated_Domain_Value_Definition: Abandonment

Enumerated_Domain:

Enumerated_Domain_Value: H

Enumerated_Domain_Value_Definition: Heat pump

Enumerated_Domain:

Enumerated_Domain_Value: M

Enumerated_Domain_Value_Definition: Monitoring well

Enumerated_Domain:

Enumerated_Domain_Value: P

Enumerated_Domain_Value_Definition: Pump

Enumerated_Domain:

Enumerated_Domain_Value: R

Enumerated_Domain_Value_Definition: Reconstruction

Enumerated_Domain:

Enumerated_Domain_Value: W

Enumerated_Domain_Value_Definition: Water Well



Missouri Department of Natural Resources Data Processing Policies and Procedures

Chapter 8 Data Processing

Digital Geospatial Metadata Component Content
Standard

Effective date

June 4, 2004

Revised

Number: 8.01-01

Specific Metadata Elements

Process Description

This section is used to describe the processes by which data were compiled. This information is extremely useful to the end user and should be carefully considered and reviewed for completeness and accuracy.

Feature locations were determined through map interpolation using United States Geological Survey 7.5 minute topographic quadrangle maps. Latitude and longitude coordinates were interpolated from those maps, and the coordinates were entered into a Microsoft Excel worksheet. The data in the worksheet were saved to a delimited text file that was opened as a table in ESRI's ArcView 3.2 software. An event theme was created using the table, and the features were converted to shapefile format. Spatial reference information denoting that the North American Datum of 1927 was recorded in a projection parameters file associated with the shapefile. The shapefile data were transformed to reference the North American Datum of 1983 and then projected to reference the Universal Transverse Mercator Zone 15 North coordinate system.

Physical and mailing address

A physical address and a mailing address must always be included. If the physical and mailing address for a described entity are the same, the same address may be listed under separate entries (physical address, mailing address) or they can be combined and listed as a single entry (physical and mailing address).

The entry for state shall always be Missouri.

The entry for country shall always be United States (no abbreviations).

Telephone numbers

Telephone numbers should use the format in the example below. Note the different format for toll-free listings.

Contact_Voice_Telephone: (573) 368-2100

Contact_Facsimile_Telephone: (573) 368-2111

Contact_TDD/TTY_Telephone: 800-735-2966



Missouri Department of Natural Resources Data Processing Policies and Procedures

Chapter 8 Data Processing

**Digital Geospatial Metadata Component Content
Standard**

Effective date

June 4, 2004

Revised

Number: 8.01-01

All contact information provided in the metadata shall include the Relay Missouri number. This number is provided for use by the hearing impaired. The three most common places in the metadata where this will appear are shown below.

Identification_Information:

Point_of_Contact:

Contact_Information:

Contact_TDD/TTY_Telephone: 800-735-2966

Data_Quality_Information:

Lineage:

Process_Step:

Process_Contact:

Contact_Information:

Contact_TDD/TTY_Telephone: 800-735-2966

Metadata_Reference_Information:

Metadata_Contact:

Contact_Information:

Contact_TDD/TTY_Telephone: 800-735-2966